# Sun SPARC® Enterprise T5120 and T5220 Servers Product Notes

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CHAPTER 1

# Important Information About the Sun SPARC Enterprise T5120 and T5220 Servers

This chapter describes important information about the Sun SPARC® Enterprise T5120 and T5220 servers.

The following sections are included:


- "Technical Support and Documentation" on page 2
- "Supported Versions of the OS and Firmware" on page 3
- "Preinstalled and Preloaded Software" on page 4
- "Mandatory Patch Information" on page 8
- "Processor Identification" on page 10
- "Cryptographic Support" on page 11

# Technical Support and Documentation

This section includes where to obtain technical support, software, and documentation.

## Technical Support

If you have any technical questions or issues that are not addressed in the Sun SPARC Enterprise T5120 or T5220 servers documentation, contact your local support services representative. For customers in the U.S. or Canada, call 1-800-USA-4SUN (1-800-872-4786). For customers in the rest of the world, find the World Wide Solution Center nearest you by visiting the web site:

http://www.sun.com/service/contacting/solution.html

## Documentation

Instructions for installing, administering, and using your servers are provided in the Sun SPARC Enterprise T5120 and T5220 servers documentation sets from the following web sites:

- http://docs.sun.com/app/docs/prod/sparc.t5120
- http://docs.sun.com/app/docs/prod/sparc.t5220

For additional documentation such as documentation for the Solaris™ OS, go to Sun's documentation web site:

- http://www.sun.com/documentation

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**Note –** Information in these product notes supersedes the information in the Sun SPARC Enterprise T5120 and T5220 documentation sets.

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# Supported Versions of the OS and Firmware

TABLE 1-1 lists supported, minimum, and preinstalled versions of the Solaris Operating System and System Firmware for the Sun SPARC Enterprise T5120 and T5220 servers.

Your server is preinstalled with the OS, patches, and firmware, but you can install the same or another supported version. Be aware that some versions of the OS require installation of mandatory patches. See "Mandatory Patch Information" on page 8.

If you install the OS, you will not have access to the additional software that was preinstalled at the factory. See "Preinstalled and Preloaded Software" on page 4.

**TABLE 1-1** Supported, Minimum, and Preinstalled Versions of the OS and Firmware

| | Supported Versions | Minimum Supported Version | Preinstalled Version* |
|---|---|---|---|
| **OS** | • Solaris 10 8/07 OS plus patches<br>• Solaris 10 5/08 OS plus patches | Solaris 10 8/07 OS | Solaris 10 8/07 OS |
| **Firmware** | • System Firmware 7.0.3<br>• System Firmware 7.1.0.g (available from patch ID 136932-01) | System Firmware 7.0.3 | System Firmware 7.1.0.g |

* The OS and firmware versions listed in the Preinstalled Version column are current relative to the publication date of this document. Preinstalled versions change over time. It is possible that your server was preinstalled with different versions than what is shown in this table, depending on the time of purchase.

## System Firmware

The System Firmware controls various aspects of the host and the service processor. The System Firmware comprises the following individual firmware components:

- Integrated Lights Out Manager (ILOM) 2.0 firmware
- OpenBoot™ firmware
- POST firmware
- Hypervisor firmware
- VBSC firmware

System Firmware updates are available from Sunsolve℠ (`http://sunsolve.sun.com`) as patch releases. When you update the System Firmware, all of the individual firmware components are updated. You cannot

update firmware components individually. Refer to the *Sun SPARC Enterprise T5120 and T5220 Servers Installation Guide* for more information about updating the server firmware.

# Preinstalled and Preloaded Software

This section describes the following:

- Preinstalled software (TABLE 1-2) that is ready to use.
- Preloaded software (TABLE 1-3) that must first be installed from the preloaded location before you can use it.

**TABLE 1-2** Preinstalled Software

| Software | Location | Function |
|---|---|---|
| Solaris 10 8/07 OS | The `root` (`/`) partition is installed on Slice 0. The core OS is on Slice 3, serving as a Live Upgrade alternate boot environment (ABE). | Operating system and alternate boot environment.<br>See "Solaris 10 OS and Solaris Live Upgrade" on page 5. |
| Cool Tools GCC v. 4.0.4 | `/opt/gcc` and `/opt/SUNW0scgfss` | GCC compiler for SPARC systems.<br>See "Additional Software Available for Your Server – Cool Tools" on page 5. |
| LDoms Manager 1.0.1 | LDoms Manager:<br>• `/opt/LDoms_Manager-1_0_1-RR/Product`<br>• `/opt/SUNWldm`<br>LDoms MIB:<br>• `/opt/ldoms_mib`<br>• `/opt/SUNWldmib` | Manages Logical Domains.<br>See "Logical Domains" on page 6. |
| Sun Explorer | `/opt/SUNWexplo` | Data collection utility.<br>See "Sun Explorer Utility" on page 6. |
| Sun Studio 12 Developer Tools | `/opt/SUNWspro/extra/bin`<br>`/opt/SUNWspro` | Sun Studio Developer Tools.<br>See "Sun Studio C, C++ & Fortran Compilers and Tools" on page 7. |

**TABLE 1-3** Preloaded Software

| Software | Location | Function |
|---|---|---|
| Sun Java Enterprise System 5 U1 | `/var/spool/stage/JES5/Solaris_sparc` | Software that provides middleware services that optimize network applications. |

# Solaris 10 OS and Solaris Live Upgrade

The Solaris 10 OS is completely installed on your system, including everything installed by the "Entire Distribution plus OEM support" option. This software includes all the locales supported by this Solaris release. In addition, some patches are preinstalled on your server. See "Mandatory Patch Information" on page 8.

---

**Note –** Some software that is provided in the Solaris 10 8/07 media kit has not been installed on your system. If you want to use the additional software, obtain the full media kit for this Solaris release and install software from the included discs. Order the appropriate media kit for the version preinstalled on your system.

---

Your server is configured with a `liveupgrade` partition on Slice 3 that contains a duplicate of the Solaris OS (core only). The `liveupgrade` partition is known as an alternate boot environment (ABE). This technology enables the Solaris OS to run normally during an upgrade or normal maintenance on an inactive boot environment.

For more information about Solaris Live Upgrade, go to:

`http://www.sun.com/software/solaris/liveupgrade`

You might need to install a different version of Solaris Live Upgrade depending on which Solaris OS version you are installing or upgrading. For more information on installing the correct versions of Solaris Live Upgrade, go to:

`http://www.sun.com/software/preinstall`

# Additional Software Available for Your Server – Cool Tools

Cool Tools provide a collection of freely available tools that enable fast and efficient development and deployment of optimally configured software solutions on CoolThreads™ servers. These tools significantly improve performance and time-to-market development for applications running on these servers.

An overview of the Cool Tools and full documentation is available at:

http://www.sun.com/servers/coolthreads/overview/cooltools.jsp

Not all of the Cool Tools listed on the Cool Tools web page are preloaded on your server. Refer to information at the Cool Tools web site for additional tools you can download and install on these servers.

# Logical Domains

A logical domain is a discrete logical grouping with its own operating system, resources, and identity within a single computer system. Each logical domain can be created, destroyed, reconfigured, and rebooted independently, without requiring a power cycle of the server. You can run a variety of applications software in different logical domains and keep them independent for performance and security purposes.

Using Logical Domains (LDoms) increases your server usage, efficiency, and return on investment, and also reduces your server footprint. The LDoms Manager software creates and manages logical domains, and maps logical domains to physical resources.

---

**Note –** The LDoms MIB must be configured before it is ready to use. A README file with configuration instructions is located in the LDoms MIB installation directory, `/opt/ldoms_mib`.

---

For more information on LDoms, go to:

http://www.sun.com/servers/coolthreads/ldoms/

# Sun Explorer Utility

Sun Explorer is a diagnostic data collection tool. The tool comprises shell scripts and a few binary executables. Sun Explorer runs on the Solaris OS.

The Sun SPARC Enterprise T5120 and T5220 servers are supported by the Sun Explorer 5.10 (or later) data collection utility, but not supported by earlier releases of the utility. Installing Sun Cluster or Sun Net Connect software from the preinstalled Java ES package might automatically install an earlier version of the utility on your system. After installing any of the Java ES software, determine whether an earlier version of the Sun Explorer product has been installed on your system by typing the following:

```
# pkginfo -l SUNWexplo
```

If an earlier version exists, uninstall it and install version 5.10, or later. To download version 5.10, go to:

http://www.sun.com/sunsolve

## Sun Studio C, C++ & Fortran Compilers and Tools

Sun Studio delivers high performance by optimizing C, C++, and Fortran compilers for the Solaris OS on multicore systems.

For an overview and documentation, go to:

http://developers.sun.com/sunstudio/index.jsp

## Sun Java Enterprise System

The Sun Java Enterprise System software provides a complete set of middleware services to support enterprise applications that are distributed across a network or Internet environment. The Java Enterprise System components that provide the services are installed using a common installer, synchronized on a common set of shared libraries, and share an integrated user identity and security management system.

Sun Java Enterprise System software provides the following services:

- Portal services – Portal Server, Portal Server Secure Remote Access, Access Manager, Directory Server, Application Server or Web Server
- Communication and collaboration services – Messaging Server, Calendar Server, Instant Messaging, Access Manager, Directory Server, Application Server or Web Server
- Network identity services – Access Manager, Directory Server, Web Server
- Web and application services – Application Server, Message Queue, Web Server
- Availability services – Sun Cluster, Sun Cluster Agents

For an overview and documentation, visit the following web sites:

http://www.sun.com/service/javaes/index.xml

http://docs.sun.com/app/docs/prod/entsys.5

If it becomes necessary to reload the software, go to the following web site for download and installation instructions:

http://www.sun.com/software/preinstall

**Note –** If you download a fresh copy of software, that software might not include patches that are mandatory for your server. After installing the software, see "Mandatory Patch Information" on page 8 for a procedure to check for the presence of patches on the system.

# Mandatory Patch Information

Before contacting support, ensure that all mandatory patches are installed on your server. In addition to installing these patches, check the SunSolve℠ web site on a regular basis for the availability of new patches.

Patches are available at `http://sunsolve.sun.com`.

TABLE 1-4 lists the mandatory patches for your server.

These patches are already installed in the preinstalled Solaris OS. If you reinstall the OS, you must reinstall these patches.

**TABLE 1-4** Mandatory Patches for Both Servers, For All Supported OS Versions

| Patch IDs | Description | Fixes Provided |
|---|---|---|
| 127753-01 or later | System panics with `n2cp` alignment error | These patches fix Change Request (CR) 6590132: System panics (`n2cp` alignment error) in IPsec testing |
| 127741-01 or later | Data integrity in the `nxge` driver | Fixes issues reported by Sun Alert ID 103076 |
| 127745-01 or later | IPsec performance | Fixes CR 6568352: IPsec performance does not scale using hardware crypto providers |

To determine if a patch is present, see "To Download Patches" on page 8.

## ▼ To Download Patches

1. **Determine whether the patches have been installed on your system.**

   For example, use the `showrev` command for each patch number:

```
# showrev -p | grep "Patch: 127753"
```

- If you see patch information listed for the queried patch, and the dash extension (the last two digits) matches or exceeds the required version, your system has the proper patches already installed and no further action is required.

  For example, if patch 127753-01 or later is installed, your system has the required version of this patch.

- If you do not see patch information listed for the queried patch, or if the dash extension precedes the required version, go to Step 2.

  For example, if no version of the 127753 patch is displayed you must download and install the patch.

  The last two digits of the patch ID represent the revision of the patch.

2. **Go to** `http://sunsolve.sun.com` **to download the patches.**

   Using the SunSolve PatchFinder tool, specify the base Patch ID number (the first six digits) to access the current release of a patch.

3. **Follow the installation instructions provided in a specific patch's** `README` **file.**

# Patches for Option Cards

If you add option cards to your server, refer to the documentation and README files for each card to determine if additional patches are needed.

# Processor Identification

Processor IDs Might Not Start at 0, and Might Not Be Contiguous.

Different platforms and platforms of the same model might have different processor IDs for identical configurations. For example, on UltraSPARC® T1 CPU based platforms, the processor IDs start with processor ID 0 but other platforms, including those based on the UltraSPARC T2 CPU, may not have a processor ID 0. The Solaris `psrinfo` command might display output similar to the following for platforms based on the UltraSPARC T2 processor:

```
8       on-line   since 09/18/2007 21:26:25
9       on-line   since 09/18/2007 21:26:30
16      on-line   since 09/18/2007 21:26:30
17      on-line   since 09/18/2007 21:26:30
```

The processor IDs might have significance if you are running LDoms. The processor IDs exported to a guest domain on a platform running multiple guest domains with a virtual machine manager might represent a virtual abstraction. Within each guest domain, each processor ID visible to the software will be a unique integer value.

Software running in different guest domains on the same physical machine might see the same or different sets of virtual processor IDs. If the server is running LDoms, the virtual processor IDs and physical processor IDs are never the same. For information about the mapping between virtual and physical CPU numbers, refer to the *Logical Domains (LDoms) 1.0.2 Administration Guide*.

Processor IDs are unique integer values in the domain where the software is running. The integer value fits in the type `processorid_t`. Also refer to the `p_online`(2) man page.

# Cryptographic Support

The UltraSPARC T2 multicore processor provides hardware-assisted acceleration of symmetric (AES, 3DES, and RC4), asymmetric (RSA, DSA, Diffie Hellman, and Elliptic Curve), hashing (SHA1, SHA256, and MD5), and random number generation cryptographic operations. The Solaris 10 8/07 OS or later provides the multithreaded device drivers that support the hardware-assisted cryptography.

Additional cryptographic support is available when you obtain the IPsec activation package and enable the IPsec cryptographic hardware as described in the following section.

## ▼ To Enable IPsec Cryptographic Hardware Acceleration

To enable IPsec crypto operations to use the cryptographic hardware on the UltraSPARC T2 processor, you must obtain and install the IPsec activation package.

1. **Obtain the IPsec activation package.**

   For information about obtaining the IPsec activation package, visit:

   `http://www.sun.com/ipsec`

2. **Use the `pkgadd` command to install the activation package as shown in the following example:**

```
% pkgadd sol-10-u4-ga-sparc-cryptoactivation.pkg
```

3. **Reboot the system after installing the activation package to complete the activation.**

Installing this package enables IPsec to automatically and transparently use the UltraSPARC T2 cryptographic hardware. For more information about IPsec, refer to the *IPsec and IKE Administration Guide* at: `http://docs.sun.com`.

CHAPTER 2

# Late-Breaking Issues

These product notes contain late-breaking information about the Sun SPARC® Enterprise T5120 and T5220 servers.

The following sections are included:


- "Hardware and Mechanical Issues" on page 14
- "Ethernet Interface Related Issues" on page 18
- "Firmware, ILOM, POST, and SP Issues" on page 27
- "Solaris OS Issues" on page 41
- "LDoms Related Issues" on page 50
- "Documentation Errata" on page 53

# Hardware and Mechanical Issues

TABLE 2-1 lists the late-breaking hardware and mechanical issues. Additional information for some of the change request (CR) issues is provided after the table.

**TABLE 2-1** Hardware and Mechanical Issues

| CR | Description | Workaround |
|---|---|---|
| 6579358 | The DVD/USB assembly might be inadvertently removed from the chassis.<br>**Note -** This issue only applies to servers that have a finger detent in the floor of the DVD/USB module. Servers with a DVD pull-tab do not experience this problem. | Apply counter-pressure to the DVD assembly when removing a USB device. In addition, do not remove a USB device while media is inserted and operating. |
| n/a | Hot-swapping fan modules requires careful fan removal. | When removing a fan module, hold the adjacent fan module in place to avoid unintentionally dislodging the adjacent fan module. |
| n/a | All disk LEDs blink simultaneously about every 16 seconds when a RAID volume is created. | Be aware that the blinking LEDs are a normal condition. |
| 6550166 | Components on the motherboard are hot to the touch. | When replacing components in the system chassis, wait for components to cool down, approximately one minute, prior to performing service actions. |
| 6574127 | If a hard drive fails in RAID 0 or RAID 1 configurations, it is possible that error messages will not be displayed on the console or in the log files. | If you encounter failed disks in RAID 0 or RAID 1 configurations, and you see the following scenario, the disk drive should be replaced:<br>• The Fault LED is lit on a disk drive that is part of a RAID0 or RAID1 volume.<br>• The error condition can be displayed remotely by running the `showenvironment` command on the service processor.<br>• The hard drive that has the Fault LED illuminated displays a status of `Failed` and the service indicator is set to ON.<br>Replace the disk drive with the lit Fault LED. |
| 6592272 | An uncorrectable L2 writeback error might generate a memory fault message (`SUN4V-8000-E2`) to the console. | See "L2 Cache Errors Might Generate an Erroneous Memory Fault (CR 6592272)" on page 16. |

**TABLE 2-1** Hardware and Mechanical Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6614432 | Erroneous power supply faults might be displayed.<br>For an example, see "Erroneous Power Supply Faults (CR 6614432)" on page 17.<br>Some servers report a low AC line input voltage fault when the input voltage is in the range of 90V to 94V AC. This threshold is incorrect and should not indicate an AC input fault until the voltage drops below 90V AC. | Ensure that both server power supplies are operating. When both power supplies are operating, the server will remain powered on during and after erroneous faults. |
| 6616209 | A power supply fan failure might not generate a fault.<br>**Note -** This issue only applies to fan failures in power supply 0. A fan failure in power supply 1 will generate a fault. | To ensure continuous operation during a possible power supply fan fault, ensure that both power supplies are connected to two separate power circuits. |
| 6616232 | Power supply fan faults are not automatically cleared.<br>If a fault is detected for a power supply fan, and the fan returns to normal operation, the fault indication is not automatically cleared. | Power cycle the power supply that has the fan fault to clear the fault. |
| 6674290 | In the Sun SPARC Enterprise T5220 server, if a XAUI card and a PCIe card are installed on the same riser assembly, the XAUI card might fail POST and be disabled when the server boots. | If possible, do not install any PCIe cards in the same riser assembly as a XAUI card. |

# L2 Cache Errors Might Generate an Erroneous Memory Fault (CR 6592272)

After an uncorrectable L2 writeback error, a bogus memory fault message (`SUN4V-8000-E2`) might be reported to the console. Example:

```
SUNW-MSG-ID: SUN4V-8000-E2, TYPE: Fault, VER: 1, SEVERITY:
Critical
EVENT-TIME: Wed Sep  5 18:49:35 EDT 2007
PLATFORM: SUNW,SPARC-Enterprise-T5220, CSN: -, HOSTNAME: wgs48-100
SOURCE: cpumem-diagnosis, REV: 1.6
EVENT-ID: 59bf6418-5dcb-c1b0-b06a-f26fa18e4ee7
DESC: The number of errors associated with this memory module has
exceeded acceptable levels.  Refer to http://sun.com/msg/SUN4V-
8000-E2
for more information.
AUTO-RESPONSE: Pages of memory associated with this memory module
are
being removed from service as errors are reported.
IMPACT: Total system memory capacity will be reduced as pages are
retired.
```

Workaround: Use `fmdump -eV -u` *uuid* with the UUID from the console message to determine if the memory error is bogus. For example:

```
# fmdump -eV -u 59bf6418-5dcb-c1b0-b06a-f26fa18e4ee7 | grep dram-esr
dram-esr = 0x1000000000008221
```

If the `dram-esr` is `0x1000000000008221`, this CR 6592272 has been encountered, and the memory error can be ignored. No memory component replacement is necessary. Use `fmadm repair` *uuid* to repair the bogus memory error.

If the `dram-esr` is different, schedule a repair procedure to replace the affected memory module. Use `fmdump -v -u` *event_id* to identify the module.

# Erroneous Power Supply Faults (CR 6614432)

The following example shows the kind of erroneous power supply faults that are described in TABLE 2-1 for this CR.

```
sc> showlogs

Oct 09 14:13:17: Chassis |major   : "Host is running"
Oct 09 14:36:10: IPMI    |minor   : "ID =  264 : 10/09/2007 : 14:36:10 : Power
Supply : /PS1/DC_POK : State Deasserted"
Oct 09 14:36:11: IPMI    |minor   : "ID =  265 : 10/09/2007 : 14:36:11 : Power
Supply : /PS1/AC_POK : State Deasserted"
Oct 09 14:36:14: IPMI    |minor   : "ID =  266 : 10/09/2007 : 14:36:14 : Power
Supply : /PS1/FAIL : State Asserted"
```

# Ethernet Interface Related Issues

TABLE 2-2 lists the late-breaking Ethernet related issues. Additional information for some of the change request (CR) issues is provided after the table.

**TABLE 2-2** Ethernet Related Issues

| CR | Description | Workaround |
|---|---|---|
| 6551509 | If you run `modunload` while the `nxge` port is running, a system panic might occur. | Unplumb the interfaces prior to unloading the driver. See "Using `modunload` While the `nxge` Port Is Running, Could Cause a System Panic (CR 6551509)" on page 19. |
| 6553515 | If a temporary PCIe network link failure occurs during boot or any time later, the system could fail.<br>If the link is up and working again before the firmware gets control, the error is a problem in firmware handling the leftover status. For an example of the error, see "Temporary PCIe Link Failure During Boot Causes a Fatal Error Later (CR 6553515)" on page 21 | If system fails to boot because of this problem, try booting again. |
| 6554478 | Receiving jumbo frames might drop the Ethernet interface to 30 Mbps due to packet dropping. | Set the MTU size to 8172 as described in "Jumbo Frames Throughput of `nxge` Drops to 30 Mbps Due to Packet Dropping (CR 6554478)" on page 22. |
| 6555486 | `Ierrs` are generated when 100Mb/Full with Forced Speed/Duplex is set in the `e1000g.conf` file.<br>These `Ierrs` are caused by the `Forced Speed/Duplex` parameter. When the port is configured to 100Mb full duplex with auto-negotiation, `Ierrs` are not generated. See "`Ierrs` Generated When 100Mb/Full With Forced Speed/Duplex Is Set in `e1000g.conf` (CR 6555486)" on page 24. | Use auto-negotiation to set the `Link Speed/Duplex` parameter in the `e1000g.conf` file. To set 100Mb full duplex for a `e1000g0` device, change the settings in the `e1000g.conf` file. |
| 6561389 | Setting properties for the network interface unit (NIU) `nxge` devices could fail.<br>For an example of the failure, see "Setting Properties for `nxge` Devices Might Fail (CR 6561389)" on page 25. | Use the global declaration without the device path in the `nxge.conf` file. For example, add the following line to the `nxge.conf` file:<br>`accept_jumbo = 1;` |

**TABLE 2-2** Ethernet Related Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6567838 | The server might panic in `nxge_start` when the `dupb` fails.<br>If jumbo frames are enabled, it is possible for the system to panic as a result of a NULL pointer reference. This scenario is only possible when frame sizes are larger than 4076. Jumbo frames with MTU=9194 do not experience this problem.<br>**Note -** This scenario is rare, and only occurs with frame sizes larger than 4076. | Disable the use of jumbo frames, but be aware that doing so impacts system performance. You should only apply the workarounds if your server is experiencing this problem. For details on this workaround, see "Server Might Panic in `nxge_start` When `dupb` Fails (CR 6567838)" on page 25. |
| 6599334 | XAUI interfaces might not be disabled when they should be disabled.<br>Normally, when a CPU network interface unit (NIU) is disabled (either through POST detected faults or manually), the corresponding XAUI interface (if one is installed) should also be disabled, but that does not happen. | Be aware of this issue. |
| 6606950 | There is an important `/etc/system` setting for 10 Gb Ethernet performance.<br>**Note -** The preinstalled Solaris OS has the correct entry in the `/etc/system` file. | If you reinstall the Solaris OS, you must add the following line to the `/etc/system` file:<br>`set ip:ip_soft_rings_cnt=16`<br>This `/etc/system` setting ensures optimum performance for 10 Gb Ethernet interfaces. |

## Using `modunload` While the `nxge` Port Is Running, Could Cause a System Panic (CR 6551509)

If you run the `modunload` command on the `nxge` driver while it is running, the system could panic. Due to an issue in the `nxge` driver, it is possible, though very unlikely, that the `nxge` driver could cause a panic during a system reboot. This panic occurs if the system is still transferring substantial amounts of network data over an `nxge` interface while the system is shutting down. It is very unlikely that this condition will occur in normal circumstances.

The panic message is `mutex_enter: bad mutex, ...`
The panic stack will include the two `nxge` driver functions `nxge_freeb`() and `nxge_post_page`().

If such a panic occurs, the system will recover, and continue to reboot normally. The system, including the `nxge` interfaces, will come back up with no further panics.

Workaround: Unplumb the interfaces prior to unloading the driver.

## ▼ To Unplumb the Interfaces Prior to Unloading the Driver

It is usually not necessary to unload a driver from a running kernel, but in those rare cases where it might be called for, you must unplumb all driver instances prior to unloading it.

1. **Find out which** `nxge` **instances are plumbed (active) using the** `ifconfig` **command:**

```
# ifconfig -a
lo0: flags=2001000849<UP,LOOPBACK,RUNNING,MULTICAST,IPv4,VIRTUAL>
mtu 8232 index 1
 inet 127.0.0.1 netmask ff000000
bge0: flags=201000843<UP,BROADCAST,RUNNING,MULTICAST,IPv4,CoS>
mtu 1500 index 2
 inet 129.153.54.82 netmask ffffff00 broadcast 129.153.54.255
        ether 0:14:4f:2a:9f:6a
nxge2: flags=201000843<UP,BROADCAST,RUNNING,MULTICAST,IPv4,CoS>
mtu 1500 index 19
 inet 129.153.54.175 netmask ffffff00 broadcast 129.153.54.255
        ether 0:14:4f:6c:85:aa
nxge3: flags=201000803<UP,BROADCAST,MULTICAST,IPv4,CoS> mtu 1500
index 20
 inet 129.153.54.171 netmask ffffff00 broadcast 129.153.54.255
        ether 0:14:4f:6c:85:ab
```

2. **Unplumb each active port (each port named** `nxge` **plus an instance number, for example,** `nxge2`**,** `nxge3`**, . . .). Example:**

```
# ifconfig nxge2 unplumb
# ifconfig nxge3 unplumb
```

3. **Run** `ifconfig -a` **again to verify that there are no active** `nxge` **interfaces. Example:**

```
# ifconfig -a
lo0: flags=2001000849<UP,LOOPBACK,RUNNING,MULTICAST,IPv4,VIRTUAL>
mtu 8232 index 1
 inet 127.0.0.1 netmask ff000000
bge0: flags=201000843<UP,BROADCAST,RUNNING,MULTICAST,IPv4,CoS>
mtu 1500 index 2
 inet 129.153.54.82 netmask ffffff00 broadcast 129.153.54.255
        ether 0:14:4f:2a:9f:6a
```

It is now safe to unload the `nxge` driver.

# Temporary PCIe Link Failure During Boot Causes a Fatal Error Later (CR 6553515)

If a temporary PCIe link failure occurs during boot or any time later, the system could fail. If the link is up and working again before the firmware gets control, the error is a problem in firmware handling the leftover status. The following is an example of the error message:

```
{0} ok 4000 dload users/bog/rustn2obp_0502
Boot device:
/pci@0/pci@0/pci@1/pci@0/pci@2/network@0:,users|bog|rustn2obp_0502 File
and args:
FATAL: /pci@0/pci@0/pci@1/pci@0/pci@2/network@0: Last Trap: Non-
Resumable Error
TL:   1
%TL:1 %TT:7f %TPC:f0238978 %TnPC:f023897c
%TSTATE:820001600  %CWP:0
%PSTATE:16 AG:0 IE:1 PRIV:1 AM:0 PEF:1 RED:0 MM:0 TLE:0 CLE:0 MG:0 IG:0
%ASI:20  %CCR:8  XCC:nzvc   ICC:Nzvc
%TL:2 %TT:3f %TPC:f024327c %TnPC:f0243280
%TSTATE:14414000400  %CWP:0
%PSTATE:4 AG:0 IE:0 PRIV:1 AM:0 PEF:0 RED:0 MM:0 TLE:0 CLE:0 MG:0 IG:0
%ASI:14  %CCR:44  XCC:nZvc   ICC:nZvc
Normal          GL=1
0:                 0               0
1:          f0200000               0
2:          f0200000               0
3:          fff78000               0
4:          fec320fc        3ffe60000
5:          f02833e4        3ffe60000
6:          fee826c8        3ffe60600
7:          fee817d8         f02432bc
%PC  f0238978 %nPC f023897c
%TBA f0200000 %CCR 8200016 XCC:nzvC   ICC:nZVc
{0} ok
```

Workaround: If the system fails to boot because of this problem, retry booting.

# Jumbo Frames Throughput of nxge Drops to 30 Mbps Due to Packet Dropping (CR 6554478)

Receive-side performance of the nxge driver drops significantly if the following two conditions are true:

- Jumbo frames are enabled because the following line is present and not commented out in the nxge.conf file:

```
accept_jumbo=1
```

  The nxge.conf file is in the /platform/sun4v/kernel/drv directory on sun4v systems, and it is in the /platform/sun4u/kernel/drv directory on sun4u systems.

- Maximum Transmission Unit (MTU) is set to a value larger than 8172. When jumbo frames are enabled, the MTU size defaults to 9194.

---

**Note –** Refer to the *Sun Quad GbE UTP x8 PCIe ExpressModule User's Guide*, the *Sun Dual 10GbE XFP PCIe ExpressModule User's Guide*, the *Sun x8 Express Dual 10 Gigabit Ethernet Fiber XFP Low Profile Adapter User's Guide*, or the *Sun x8 Express Quad Gigabit Ethernet UTP Low Profile Adapter User's Guide*, for details.

---

## ▼ To Set the MTU Size to 8172

If jumbo frames are enabled, use this procedure to set the MTU to a value of 8172. This procedure uses *port1* as an example.

1. **Edit or create an** /etc/hosts **file and add the following line in it:**

```
99.99.9.1  nxge-port1
```

   Where *nxge-port1* is the name you give to the interface, and *99.99.9.1* is the IP address you want to assign to the interface.

2. **Edit or create a** /etc/hostname.nxge1 **file and place the following two lines in it:**

```
nxge-port1
nxge-port1 mtu 8172
```

3. **If you want the system to set the netmask to a special value automatically, add the following line in the** `/etc/netmasks` **file (using netmask** *FFFFFF00* **as an example):**

```
99.99.9.1 255.255.255.0
```

4. **Reboot the system.**

   In this example, the `nxge1` interface is automatically plumbed with IP address `99.99.9.1`, MTU value 8172 and netmask `ffffff00`.

5. **Run** `ifconfig -a` **to confirm the configuration:**

```
# ifconfig -a
nxge1: flags=1201000802<BROADCAST,MULTICAST,IPv4,CoS,FIXEDMTU>
mtu 8172 index 3
inet 99.99.9.1 netmask ffffff00 broadcast 99.255.255.255
ether 0:14:4f:6c:88:5
```

If you want to set parameters permanently for other interfaces, create `/etc/hostname.nxge0`, `/etc/hostname.nxge2` and `/etc/hostname.nxge3` similarly, and add the name IP-address pairs to the same `/etc/hosts` file. Also add their netmasks to the same `/etc/netmasks` file.

# `Ierrs` Generated When 100Mb/Full With Forced Speed/Duplex Is Set in `e1000g.conf` (CR 6555486)

`Ierrs` can be caused by the `ForcedSpeedDuplex` parameter. The following code output shows an example of implementing the workaround in the `e1000g.conf file`. In this example, the `e1000g0` device is configured for 100Mb full duplex using autonegotiation.

```
ForceSpeedDuplex=7,7,7,7,7,7,7,7,7,7,7,7,7,7,7,7;
        # This will force Speed and Duplex for following settings
for a typical instance.
         # 1 will set the 10 Mbps speed and Half Duplex mode.
         # 2 will set the 10 Mbps speed and Full Duplex mode.
         # 3 will set the 100 Mbps speed and half Duplex mode.
         # 4 will set the 100 Mbps speed and Full Duplex mode.
# 7 will let adapter autonegotiate.
AutoNegAdvertised=8,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0;
        # This parameter determines the speed/duplex options that
will be
       # advertised during auto-negotiation. This is a bitmap with
the
         # following settings.
        # Bit    |  7  |  6  |   5   |   4   |  3   |  2   |  1  |  0
# Setting| N/A | N/A | 1000F |  N/A  | 100F | 100H | 10F | 10H
         #
         # For example:
# To advertise 10 Half only AutoNegAdvertised   =  1
         # To advertise 10 Full only AutoNegAdvertised   =  2
         # To advertise 10 Half/Full AutoNegAdvertised   =  3

         # To advertise 100 Half only AutoNegAdvertised  =  4
         # To advertise 100 Full only AutoNegAdvertised  =  8
         # To advertise 100 Half/Full AutoNegAdvertised  = 12
         # To advertise 1000 Full only AutoNegAdvertised = 32
         # To advertise all speeds AutoNegAdvertised     = 47
```

## Setting Properties for nxge Devices Might Fail (CR 6561389)

Setting a property for an nxge device node might not work correctly. The following is an example:

```
name="SUNW,niusl" parent="/niu@80" unit-address="0" accept_jumbo=1;
name="SUNW,niusl" parent="/niu@80" unit-address="1" accept_jumbo=1;
Entries from /etc/path_to_inst:
/niu@80" 0 niumx
/niu@80/network@0" 0 nxge
/niu@80/network@1 1 nxge
Entries from /etc/driver_aliases:
niumx "SUNW,niumx
nxge "SUNW,niusl
```

Workaround: Use the global declaration without the device path in the nxge.conf file. For example, add the following line to the nxge.conf file.

```
accept_jumbo = 1;
```

## Server Might Panic in nxge_start When dupb Fails (CR 6567838)

If jumbo frames are enabled, it is possible for the system to panic as a result of a NULL pointer reference. This scenario is only possible when frame sizes are larger than 4076. Jumbo frames with MTU=9194 do not experience this problem.

Workaround: Disable jumbo frames or use a smaller MTU size as described in the following procedures.

### ▼ To Disable Jumbo Frames

Disabling jumbo frames or using jumbo frames with a smaller MTU impacts system performance. Only perform the following steps if the system panics due to jumbo frames.

1. **Edit the** /platform/sun4v/kernel/drv/nxge.conf **file, and ensure that any line with** accept_jumbo=1; **is commented out.**
2. **Ensure that there is no** set nxge:nxge_jumbo_enable=1 **in the** /etc/system **file.**

## ▼ To Set the MTU to a Smaller Size

If you want to use jumbo frames, you can use this workaround instead of disabling jumbo frames. This procedure sets the MTU to a value equal to or smaller than 4076, using *port1* as an example.

---

**Note –** By following these steps, the MTU values are permanent. As an alternative, you can run the command `ifconfig nxgeX mtu 4076` (where *X* is the instance number), but the MTU value will change back to the default one after a reboot.

---

1. **Edit or create an `/etc/hosts` file and add the following line in it:**

```
99.99.9.1       nxge-port1
```

   Where *nxge-port1* is the name you assign to the interface. *99.99.9.1* is the IP address you want to assign to the interface.

2. **Create an `/etc/hostname.nxge1` file and place the following two lines in it:**

```
nxge-port1
nxge-port1 mtu 4076
```

# Firmware, ILOM, POST, and SP Issues

TABLE 2-3 lists the late-breaking issues for the firmware, ILOM (including ALOM compatibility CLI), POST, and service processor (SP). Additional information for some of the change request (CR) issues is provided following the table.

**TABLE 2-3** Firmware, ILOM, POST, and SP Issues

| CR | Description | Workaround |
|---|---|---|
| 6541482 | POST always starts on the lowest available strand even when that strand is disabled.<br>If processor strand 0 of the first available physical core has been marked disabled (as seen in the list of disabled devices in the output of the `showcomponent` command), a new master strand is selected by the initialization process, and the disabled strand is taken offline. But the system initialization and execution of power-on-self-test (POST) occurs using the disabled processor strand, because power on and reset execution always starts on strand 0 of the first available physical core.<br>When this situation happens, the system might fail to run the diagnostics and the system might fail in an unpredictable manner. The system might not start the required firmware and software components as a result. | If strand 0 of the first physical core is known to be bad, there is no workaround. The motherboard must be replaced. |
| 6549028 | The `netsc_commit` command might cause the system to hang.<br>Through a serial connection, the network might not be visible. | Reboot the system.<br>If rebooting fails to reset the SP, AC power cycle the system to recover the SP. Be aware that you will lose active domains. |
| 6556505 | The PCIe link might fail to train as x8.<br>This problem might occur during a power on or reset sequence where the I/O bridge (PCIe root complex) of the UltraSPARC T2 CPU does not properly train the PCIe interface. | For workaround procedures, see "Problem When the PCIe Link Fails to Train as x8 (CR 6556505)" on page 33. |
| 6568750 | Scripts that log into the SP might timeout after 60 seconds.<br>If this error occurs, the following error message is displayed:<br>`Logging out after 60 seconds.`<br>**Note -** This error is not seen during normal login, only when logging in with a script. | If you use scripts to log into the SP, be aware of this issue. |

**TABLE 2-3** Firmware, ILOM, POST, and SP Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6571886 | POST might encounter intermittent POST PIU0 link train errors during a power cycle test. | Power cycle the system as follows (example uses the ALOM CMT compatibility CLI):<br>`sc> poweroff -fy`<br>`sc> clearasrdb`<br>`sc> poweron -c` |
| 6573354 | The method for clearing POST results (displayed with the `showfaults` command) has changed.<br>After POST runs, `showfaults` displays the status. The only way to clear the status is to enter the `setdefaults` command. For users familiar with ALOM CMT, the previous way to clear the status was to enter the `resetsc` command. | To clear POST results, use the ALOM CMT compatibility `setdefaults` command. |
| 6577528 | A terminal server `break` command does not work on the SP serial port.<br>If you use Telnet to connect to the SP serial line with a terminal server (such as the Cisco ASM series) and try to send a break to the Solaris host, the `break` command does not work and is ignored by the SP. | Use the break commands from the SP (either the ILOM or ALOM CMT compatibility commands) to send a break to the Solaris host.<br>Refer to the *Integrated Lights Out Management (ILOM) Supplement for SPARC Enterprise T5120 and T5220 Servers* for details. |
| 6579390 | After disabling a DIMM, the OpenBoot PROM banner does not show a decrease in the amount of memory. | If you manually disable any CPU or memory resource with the ASR commands while the host is powered on, you must power cycle the host to complete the disabling of the resource.<br>After the power cycle, the resource will be disabled, and the proper information will be displayed in the banner. |
| 6581309 | Console behavior is inconsistent when a graphics device and keyboard are specified for console use.<br>This behavior occurs when the OpenBoot variables `input-device` and `output-device` are set to anything other than the default value of `virtual-console`.<br>If the control domain is set this way, some console messages are sent to the graphics console and others are sent to the virtual console. This situation results in incomplete information on both consoles. In addition, when the system is halted, or a break is sent to the console, control is passed to the virtual console, which requires keyboard input over the virtual console. As a result, the graphics console appears to hang. | If the graphics console appears hung, connect to the virtual console from the system processor to provide the required input. Press Return on the virtual console keyboard once to see the output on the virtual console. If this workaround does not work, contact Sun Service[sm].<br>To prevent the problem, perform one of the following workarounds:<br>• Install patch ID 137111-01 (or higher).<br>• Use only the virtual console. Ensure that the default value of `virtual-console` is set for both the `input-device` and `output-device` variables. |

**TABLE 2-3** Firmware, ILOM, POST, and SP Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6582340 | When you are connected to the virtual console and you enter the escape character sequence (`.#`) to enter the SP CLI, the following two error messages might display before reaching the CLI prompt:<br>`read: Connection reset by peer`<br>`Write to vbsc: Illegal seek`<br>This situation occurs when there is a lot of output through the console, and implies that the console is in use when it is not. | If you are refused write access when you initiate a connection to the host with the console command, enter `console -f` (the force option) to get read and write access. |
| 6582853 | The `showfaults` ALOM CMT compatibility command reports the motherboard as faulty instead of the actual faulty DIMM or PCIe card. | Use the fault management utilities that are described in the Predictive Self-Healing (PSH) Knowledge Articles located at:<br>`http://www.sun.com/msg/`*MSGID*<br>(*MSGID* is the PSH Message ID.)<br>For more information see "The `showfaults` Command Shows the Motherboard as Faulty Instead of the DIMM (CR 6582853)" on page 35. |
| 6583567 | A communication channel between the primary domain and the service processor (SP) could hang and disable communication over the channel. | See "Communication Channel Between the Primary Domain and the Service Processor (SP) Might Hang (CR 6583567)" on page 37. |
| 6585114 | During automated testing, the SP could encounter problems with `useradd` and `usershow` commands, followed by the failure of all login attempts. | AC power cycle the system. |
| 6585292 | Some extraneous and misleading warning messages are displayed in the output of the ILOM `reset /SP` command and of the ALOM CMT compatibility `resetsc` command.<br>For an except of the misleading messages, see "Resetting the SP Produces Extraneous Warning Messages (CR 6585292)" on page 38. | Ignore the extraneous warning messages. |
| 6585340 | The `uadmin 2 0` and `reboot` commands read old bootmode settings. | See "The `uadmin 2 0` and `reboot` Commands Read old Bootmode Settings (CR 6585340)" on page 36. |
| 6587869 | Using the `consolehistory -e` command with a value greater than 1000 might result in the SP becoming unusable. | To see the entire `consolehistory` log, use the `-v` option.<br>If you need to recover from problems related to running the `consolehistory` command with more than 1000 lines, reboot the SP. |

**TABLE 2-3** Firmware, ILOM, POST, and SP Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6587919 | The first time that `show /SYS` is executed after a power on, `(none)` is displayed for the product name. | Use the `show /SYS` command again and the product name is displayed. |
| 6588999 | When you connect to the ILOM CLI with SSH and the SP is reset, you might see an error message similar to the following:<br>`Performing hard reset on /SP failed reset: Transport error - check errno for transport error` | This error can be ignored. The command actually succeeds and the SP is reset. When the SP resets, you lose the SSH connection to the SP. |
| 6589043 | If there are fewer than 21 entries in the event log, the `showlogs` command displays none of the events.<br>This situation is known to occur in the following scenarios:<br>• After a fresh installation of the system (out-of-box), the service processor (SP) event log is very likely to have fewer than 21 entries.<br>• After you clear the SP event log with the browser interface (BI), or ILOM CLI, the ALOM CMT compatibility CLI `showlogs` command displays no new events until at least 21 new events are logged. | Use the `showlogs -v` option to display the logs. After 21 or more events are logged in the log file, you can revert back to using `showlogs` with no options. |
| 6591367 | You cannot obtain the system DIMM FRU information with the `ipmitool` utility. | Obtain the DIMM FRU information using the SP ALOM CMT compatibility CLI (with the `showfru` command) or the SP ILOM CLI (with the `show` *fru-name* command). Refer to the *Integrated Lights Out Management (ILOM) Supplement for Sun SPARC Enterprise T5120 and T5220 Servers* for details. |
| 6593547 | An erroneous watchdog reset error might occur.<br>If this error occurs, the system will not complete the boot sequence. You might see the following error in either the I/O or the Control domain when attempting to boot and the `boot` sequence will be aborted:<br>`"ERROR: Last Trap: Watchdog Reset".` | The error is erroneous and can be ignored.<br>Type **`boot`** at the `OK` prompt to proceed. |

**TABLE 2-3** Firmware, ILOM, POST, and SP Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6596430 | If the socketed EEPROM (SCC) is replaced, the SP does not always read some SP properties from the new EEPROM.<br>If the SP configuration variable `sc_backupuserdata` is set to `false`, the following user configuration values are not backed up to the socketed EEPROM:<br>`if_emailalerts, mgt_mailhost, mgt_mailalert, sc_customerinfo, sc_powerondelay, sc_powerstatememory, sc_backupuserdata` | Manually copy the user settings before replacing the motherboard in a motherboard swap scenario. After the swap is complete, manually set the user parameters. |
| 6596594 | Changed OpenBoot NVRAM parameters do not take affect after a `resetsc`.<br>If the service processor is reset while the control domain is at the `ok` prompt, OpenBoot PROM will permanently lose its ability to store nonvolatile LDoms variables or security keys until the host has been reset. Guest domains are not affected by this problem. Attempts to update LDoms variables or security keys results in the following warning messages:<br>`WARNING: Unable to update LDOM Variable`<br>`WARNING: Unable to store Security key` | After changing variables, reset the control domain using the `reset-all` command. |
| 6598381 | In rare circumstances, the PCIe interface unit (PIU) might issue a spurious error interrupt.<br>For examples, see "Spurious PIU Errors (CR 6598381)" on page 39. | These events are harmless and can be ignored. |
| 6601900 | When the OpenBoot PROM is set to `input-device=keyboard`, you might see the following warning message when the system host is powered on or reset:<br>`No keyboard support found`<br>A U.S. keyboard will work properly. International keyboards (French, German, and so on) might behave as U.S. keyboards. | Do not use USB keyboards. Instead, use a virtual console by setting the `input-device` variable to `virtual-console`. |
| 6602913 | IMPI power off or power cycle operations might fail. | Repeat the IPMI power off, or power-cycle operation, or use one of the other available interfaces to perform this operation. |

**TABLE 2-3** Firmware, ILOM, POST, and SP Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6604305 | During system initialization, memory might not be detected, and the following error is reported: `ERROR: MB/CMP0/BR3/CH0/D0 must be populated.`<br>Rarely, the probing of DIMMs fails due to ILOM simultaneously updating DIMM information. When the DIMM probing fails, the host either boots with a reduced memory configuration, or fails to boot. This situation is not likely to happen when the service processor (SP) is reset, because the DIMMs are probed before ILOM starts dynamic `fruid` updates. This issue is most likely to occur when the host is being repeatedly powered on and off without resetting the SP. | Power off the host, reset the SP, and power on the host. |
| 6612687 | Repeated attempts to show or set the serial port properties of the host port might cause the ILOM CLI to hang and become unresponsive. | Do not configure the host serial port properties from the service processor. Instead, set the properties from the Solaris OS.<br>If the ILOM CLI hangs, you must reset the system by power cycling the AC power. |
| 6614576 | The help message is incorrect in the ILOM BI.<br>The informational text displayed on the Configuration Serial Port tab in the ILOM BI refers to a DB-9 connector, but the message should refer to the RJ-45 connector. | Be aware of this discrepancy. |
| 6618773 | A diagnostic routine that runs at startup (IBIST) might disconnect the memory controller unit (MCU), resulting in errors.<br>For an example of the errors, see "Diagnostic Routine That Runs at Startup (IBIST) May Accidentally Disconnect the MCU (CR 6618773)" on page 39. | Install Patch 127580-04 or later, and update the System Firmware to version 7.0.9 or later. |

**TABLE 2-3** Firmware, ILOM, POST, and SP Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6662997 | If you change any firmware variables (such as `auto-boot?`), keep a record of your changes.<br>In the event of a motherboard replacement, most of the SP variables will become the default values.<br>The service manual indicates that moving the SCC module to the new motherboard will preserve customized variables, but this is not<br>true because not all variables are stored in the SCC module.<br>The following variables are stored in the SCC module, and will be preserved when the SCC module is moved to a replacement motherboard:<br>• Host ID<br>• Mac addresses<br>All other variable values will become default values. | Keep a record of any firmware variables that are modified.<br>In the event that the motherboard is replaced, use your record of customized variables to manually modify the firmware variables on the new motherboard. |
| 6610861 and 6613564 | The prompt and character sequence for dropping to the u-boot state is inconsistent with previous platforms.<br>When the service processor is booting, pressing a key during the 5-second interval while the prompt `Hit any key to stop autoboot` is displayed causes the service processor boot sequence to stop and a `u-boot` prompt is displayed. | Type the `boot` command to resume the service processor boot sequence. |

# Problem When the PCIe Link Fails to Train as x8 (CR 6556505)

The system could encounter a problem during a power-on or reset sequence where the I/O bridge (PCIe root complex) of the UltraSPARC T2 CPU does not train at all or trains at a lane width less than 8, and no error or fault is generated to indicate to the user this problem has been encountered.

## ▼ To Identify the Problem

Though no error or fault is reported, it is easy to identify because no PCIe I/O devices will be available to the system. If you power on the system, or reset the domain and try and boot from a disk or network device, and you get an error similar to the following:

```
{0} ok boot disk
Boot device: /pci@0/pci@0/pci@2/scsi@0/disk@0  File and args:
ERROR: boot-read fail

Can't locate boot device

{0} ok
```

1. **At the** `ok` **prompt, issue the** `show-devs` **command.**
2. **Check the output to for PCIe devices.**

   If no PCIe devices are displayed, the server has encountered this problem.

---

**Note –** All PCIe devices begin with the path `/pci@0/pci@0`.

---

## ▼ To Correct the Problem

1. **Take down all domains and power off the system.**
2. **Run power-on-self-test (POST) to identify whether this is a persistent failure or not.**

   To enable POST, use the `setsc` (an ALOM CMT compatibility CLI command) and configure POST to run at max level.

   For example:

```
sc> setsc diag_mode normal
sc> setsc diag_level max
```

3. **Power on the system.**

   POST tests the CPU, memory, and I/O subsystems. If the problem is persistent, POST will fail the PCIe root complex test and disable the `/SYS/MB/PCIE` component.

4. **If POST detects the problem, replace the motherboard.**

# The `showfaults` Command Shows the Motherboard as Faulty Instead of the DIMM (CR 6582853)

In a system with DIMMs or PCIe adapters that have been faulted by PSH (Predictive Self-Healing) diagnosis on the host, the ALOM `showfaults` command displays the faulty FRU as the motherboard (`/SYS/MB`) instead of the DIMM or PCIe adapter. This problem will occur for the following PSH Message-IDs (MSGID):

- SUN4V-8000-E2
- SUN4V-8000-D
- SUN4-8000-4P
- SUN4-8000-A2
- SUN4-8000-75
- SUN4-8000-9J
- SUN4-8000-D4
- PCIEX-8000-0A
- PCIEX-8000-DJ
- PCIEX-8000-HS

The following example from the ALOM CMT compatibility CLI illustrates the problem. In this example, the faulty FRU displayed is the motherboard (`/SYS/MB`) when the actual faulty component is a memory DIMM.

```
sc> showfaults -v
Last POST Run: Jul. 13 18:32:11 2007

Post Status: Passed all devices
ID Time               FRU        Class        Fault
0 Jul 13 19:31:34    /SYS/MB    Host detected fault, MSGID:
SUN4V-8000-DX  UUID: 7b471945-ceef-eea0-c3ad-85ca140be5b2
```

In addition, there is a problem with the output displayed by the `show /SYS/faultmgmt` command (ILOM CLI). The `fault_state` property of components, and the faulted components listed under the Fault Management tab in the ILOM BI are incorrect for the PSH Message-IDs listed above. Also, the FB-DIMM fault indicator will not operate, and the FRUID for the motherboard will have a fault recorded.

Workaround: Use the Fault Management utilities on the host to find the location of the faulty DIMM(s) or PCIe adapters. Instructions for using these utilities for these faults can be found in the Predictive Self-Healing Knowledge Articles located at: `http://www.sun.com/msg/`*MSGID*

where *MSGID* is one of the PSH Message IDs listed in the bulleted list in this section and displayed by the ALOM `showfaults` command.

For faulty DIMMs, refer to the DIMM label on the air duct or system cover to verify the DIMM location.

Once the faulty DIMM is replaced and the PSH fault has been cleared, the entry in `showfaults` will be deleted, and the fault recorded in the motherboard FRUID will be cleared.

## The `uadmin 2 0` and `reboot` Commands Read old Bootmode Settings (CR 6585340)

You can change LDoms variables in the control domain in one of three ways, with the OpenBoot `setenv` command in the control domain, with the Solaris `eeprom` command in the control domain, or using ILOM `bootmode bootscript` option. Changes made with the `setenv` and `eeprom` commands take effect immediately. Changes made with the `bootmode` command are supposed to take effect on the next reset, no matter what kind of reset it is.

Changes made in any of these three ways are supposed to stay in effect until the next change. That is, it doesn't matter how the value of an LDoms variable is changed. Once changed, the value is supposed to stay in effect until it is changed again.

However, due to this issue, changes made with the `bootmode` command will become effective only after a power-on reset and will, on every reset (other than a power-on reset) that follows, override any intervening change made with the `setenv` or `eeprom` commands. That is, the changes made by the `bootmode` command require a power-on reset to be effective. Changes made with the `setenv` or `eeprom` commands will only persist until the next reset, at which point the variable will revert to the value set by the last `bootmode` command. This persistence of the `bootmode` setting will persist until the machine is power-cycled. Upon power cycling, the prior `bootmode` setting will not take effect. Any subsequent change made by the `setenv` or `eeprom` command will now persist over resets, at least until the next `bootmode` command followed by a power cycle.

Workaround: Restart the control domain with a power-on reset right after the `bootmode` command is executed, and restart again after the control domain boots to either OpenBoot or Solaris. The first power-on reset will make the `bootmode` command effective and the second power-on reset will workaround the persistence issue.

The control domain can be reset using power-on reset with the ALOM CMT compatibility CLI `powercycle` command. If the control domain is booted to the Solaris OS, remember to properly shut down the OS before executing the `powercycle` command.

## Communication Channel Between the Primary Domain and the Service Processor (SP) Might Hang (CR 6583567)

Rarely, a communication channel between the primary domain and the SP might hang and disable communication over the channel.

Workarounds:

- If the channel is used by a primary domain service or application other than the fault management daemon (`fmd`), for example the LDoms Manager `ldmd`, you might see warning or error messages concerning communication failures. In this case, the channel can be brought back up by restarting the affected service or application.
- If the channel is the one used by `fmd`, there are no warning or error messages. `fmd` will not receive ereports, and diagnosis of the errors does not occur.
- If the channel is the one used by the Solaris OS to communicate with the SP, you could see warning or error messages regarding failure to obtain the PRI, failure to access ASR data, or failure to set LDoms variables or failure in SNMP communication. In this case, the channel can be brought back up by resetting the SP. If the SP is reset, restart the `fmd` on the primary domain. If resetting the SP fails to bring the channel back up, then it might also be necessary to reboot the primary domain.
- If a domain crashes or a service spontaneously restarts without any associated fault messages, you must recover as follows to minimize potential loss of error telemetry.

### ▼ To Recover From a Domain Crash

1. **Restart `fmd` on the primary domain.**
2. **Wait 30 seconds.**
3. **Reset the SP with either of the following commands:**

```
-> reset /SP [ILOM CLI]
OR
sc> resetsc -y [ALOM CMT compatibility CLI]
```

4. **Restart `fmd` on the primary domain.**

   Enter the following command from the Solaris OS:

```
# svcadm restart svc:/system/fmd:default
```

# Resetting the SP Produces Extraneous Warning Messages (CR 6585292)

The following excerpt shows the extraneous messages that should be ignored.

```
sc> resetsc [similar messages are also displayed for the reset /SP command]
...
Linux version 2.4.22 (kbellew@sanpen-rh4-0) (gcc version 3.3.4) #2 Wed
Jul 18 19:25:18 PDT 2007 r21410
Loading modules: fpga Warning: loading
/lib/modules/2.4.22/misc/fpga/fpga.o will taint the kernel: non-GPL
license - Proprietary
  See http://www.tux.org/lkml/#export-tainted for information about
tainted modules
...
Module fpga loaded, with warnings
fpga_flash Warning: loading
/lib/modules/2.4.22/misc/fpga_flash/fpga_flash.o will taint the kernel:
no license
  See http://www.tux.org/lkml/#export-tainted for information about
tainted modules
Module fpga_flash loaded, with warnings
immap Warning: loading /lib/modules/2.4.22/misc/immap/immap.o will taint
the kernel: no license
Refer to: http://www.tux.org/lkml/#export-tainted for information about
tainted modules
Module immap loaded, with warnings
...
EXT3-fs warning: maximal mount count reached, running e2fsck is
recommended
EXT3 FS 2.4-0.9.19, 19 August 2002 on tffs(100,1), internal journal
EXT3-fs: mounted filesystem with ordered data mode.
kjournald starting.  Commit interval 5 seconds
EXT3-fs warning: maximal mount count reached, running e2fsck is
recommended
...
ipt_recent v0.3.1: ... < ... >.  http://snowman.net/projects/ipt_recent/
arp_tables: (C) 2002
802.1Q VLAN Support v1.8 ... < ... >
All bugs added by ...
```

# Spurious PIU Errors (CR 6598381)

In rare circumstances, the PIU (PCIe interface unit) might issue a spurious error interrupt.

The following is an example of the event reported after diagnostics:

```
SUNW-MSG-ID: FMD-8000-0W, TYPE: Defect, VER: 1, SEVERITY: Minor
EVENT-TIME: Mon Aug 27 10:07:33 EDT 2007
PLATFORM: SUNW,SPARC-Enterprise-T5220, CSN: -, HOSTNAME: xxxxxxx
SOURCE: fmd-self-diagnosis, REV: 1.0
EVENT-ID: dd9a4415-9be4-cb55-d061-8804b8009d3c
```

The following is an example of the event reported by the `fmdump` command:

```
# fmdump -eV -u dd9a4415-9be4-cb55-d061-8804b8009d3c
TIME                           CLASS
Aug 27 2007 10:06:15.496599680 ereport.fm.ferg.invalid
nvlist version: 0
class = ereport.fm.ferg.invalid
ena = 0xd4e233fe480002
info = DMU Core and Block Error Status(0): No bits set
 raw-data = 0x2 0x1a62441a01d844 0x30000000000005 0x4b63c07df9ff
0x3e002421030607 0x
3e 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0
__ttl = 0x0
 __tod = 0x46d2da57 0x1d998280
```

These events are harmless and can be ignored.

# Diagnostic Routine That Runs at Startup (IBIST) May Accidentally Disconnect the MCU (CR 6618773)

In some cases, the MCU is disconnected from corresponding DIMM modules and CPU cores, and the following messages are reported to the console.

For example:

```
Chassis | major: Host has been powered on
Chassis | major: Dec 19 08:45:11 ERROR: MB/CMP0/MCU2 Failed IBIST,
disabled
Fault | critical: SP detected fault at time Wed Dec 19 08:45:12
2007. /SYS/MB/CMP0/MCU2 Forced fail (IBIST)
Chassis | major: Dec 19 08:45:13 ERROR: MB/CMP0/MCU3 unused because
MB/CMP0/MCU2 is not configured
Chassis | major: Dec 19 08:45:13 ERROR: MB/CMP0/L2_BANK4,
MB/CMP0/L2_BANK5 unused because MB/CMP0/MCU2 is not configured
Chassis | major: Dec 19 08:45:13 ERROR: MB/CMP0/L2_BANK6,
MB/CMP0/L2_BANK7 unused because MB/CMP0/MCU3 is not configured
Chassis | major: Dec 19 08:45:13 ERROR: Degraded configuration:
system operating at reduced capacity
Chassis | major: Dec 19 08:45:13 ERROR: System DRAM Available:
008192 MB
Chassis | major: Dec 19 08:45:13 ERROR: Only 4 cores, up to 32 cpus
are configured because some L2_BANKS are unusable
```

Workaround: Install Patch 127580-04 or later, and update the System Firmware to version 7.0.9 or later.

# Solaris OS Issues

TABLE 2-4 lists the late-breaking issues related to the running the Solaris OS on the Sun SPARC Enterprise T5120 and T5220 servers. Additional information for some of the change request (CR) issues is provided following the table.

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**Note –** Additionally, more general Solaris OS late-breaking issues are described in the Solaris 10 Release Notes.

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**TABLE 2-4** Solaris OS Issues

| CR | Description | Workaround |
|---|---|---|
| 6479347 | The Solaris `prtdiag` command displays device paths incorrectly for `e1000g` driver devices. | Force load all instances of the `e1000g` driver and then restart the `picld` daemon as follows:<br>`# devfsadm -i e1000g`<br>`# svcadm restart svc:/system/picl`<br>Another workaround is to use the `-r` option when booting or rebooting the system. |
| 6552999 | Performing a Control-C while the `prtdiag -v` command is running causes blank environmental data fields when run again.<br>The missing output is persistent until the picld SMF service is restarted. | If the environmental data is missing from the `prtdiag` output, restart the `picld` SMF service in the control domain with the following command:<br>`# svcadm restart picl` |
| 6555956 | Servers might experience panics generated from the PCIe root complex.<br>A panic could occur during reboot with the following message:<br>`"Fatal error has occurred in: PCIe root complex."`<br>The panic only occurs during a reboot and has never been observed during a reboot that follows the panic. The panic can occur even if no external USB devices are connected to the server. | If your server experiences this panic, perform the workarounds described in "Servers Might Experience Panics Generated From the PCIe Root Complex (CR 6555956)" on page 45. |

**TABLE 2-4** Solaris OS Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6564180 | The Solaris OS `locator` command does not work on this server. | Instead, use either the ILOM or ALOM CMT compatibility `locator` command as follows:<br>• From the ILOM CLI:<br>`-> show /SYS/LOCATE/`<br>`-> show /SYS/LOCATE/ value=off`<br>`-> show /SYS/LOCATE/ value=on`<br>• From the ALOM CMT compatibility CLI:<br>`sc> showlocator`<br>`sc> setlocator on`<br>`sc> setlocator off` |
| 6572985 | During long SunVTS test runs, the SunVTS `cryptotest` could fail intermittently with an error similar to the following:<br>`"cryptotest.FATAL n2rng0: SUNW_RANDOM generate failed: values generated fall outside statistical tolerance"` | Install the SunVTS Patch number 127294-01 (or later). |
| 6578410 | The server might hang when trying to boot with an Infiniband HBA card installed. | Add the following setting to the `/etc/system` file:<br>`set tavor:tavor_iommu_bypass = 0` |
| 6586624 | The Solaris `prtdiag` and `prtpicl` commands might not display complete information, as follows:<br>• If the `prtdiag -v` option is specified, the firmware version and the chassis serial number might not be displayed.<br>• The `prtpicl` command will not always display the physical-platform section. | Use alternative methods to obtain the information you need as described in "Information Missing From `prtpicl` and `prtdiag` Commands (CR 6586624)" on page 46. |
| 6586847 | The Solaris `prtdiag` command without the `-v` option does not show failures in the output. | Use the `-v` option when running the `prtdiag` command. |
| 6587380 | The Solaris `prtdiag -v` command displays non-voltage information in the voltage indicator section. | Be aware that the voltage and nonvoltage information (such as `PS0/TEMP_FAULT`) is accurate and represents the current condition of the components. |

**TABLE 2-4** Solaris OS Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6587389 | The Solaris `prtdiag -v` command might display information with missing spaces, making the output difficult to read. | Instead, use the `showenvironment` command from the ALOM CMT compatibility CLI as follows:<br>`sc> showenvironment`<br>For more details, see "The `prtdiag -v` Command Has Formatting Issues (CR 6587389)" on page 47. |
| 6588452 | Booting the Solaris OS from an external USB DVD-ROM drive could cause a panic and fail to boot.<br>For more information, see "Booting the Solaris OS From an External USB DVD-ROM Drive Could Cause a Panic (CR 6588452)" on page 46. | Use the built-in DVD drive, or use a drive whose subclass is not 2, 3, or 4. |
| 6588499 | A Solaris OS shutdown might hang and result in fewer system services.<br>Rarely, a shutdown performed immediately after the Solaris OS boots might cause the system to hang because some system services are attempting to stop while others are still in the process of starting. The hang occurs with a message similar to the following:<br>`svc.startd: The system is coming down. Please wait`<br>`svc.startd: 74 system services are now being stopped` | Reboot the system by dropping to the service processor (SP). Then power cycle the host system using one of the following methods:<br>• From the ILOM CLI:<br>`-> stop /SYS`<br>`-> start /SYS`<br>• From the ALOM CMT compatibility CLI:<br>`sc> poweroff`<br>`sc> poweron`<br>`sc> powercycle` |
| 6588550 | The Solaris `prtdiag -v` command is slow to respond on the Sun SPARC Enterprise T5120 servers.<br>The command might take as long as 5 minutes to display output and therefore appears to hang. | Be aware of the delay, and wait for the output. Do not perform a Control-C. |
| 6589612 | The `raidctl -l` command continuously outputs the following output:<br>`# raidctl -l`<br>`Controller: 1`<br>`Volume:c1t0d0`<br>`Volume:c1t2d0`<br>`Disk: 0.0.0`<br>`Disk: 0.0.0`<br>`...` | Use the Control-C keyboard sequence to stop the output. |

**TABLE 2-4** Solaris OS Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6592238 | You might not be able to remove a RAID 1 volume after RAID 1 and RAID 0 volumes are created.<br>When two volumes are created through the onboard SAS controller (or any controller that uses the `mpt` driver), the `raidctl` utility is unable to delete one of the RAID volumes and cannot list the correct disk information. When this occurs, the following is the error message is displayed:<br>`# raidctl -l`<br>`Device record is invalid.` | Apply patch ID 126434-05 (or later). |
| 6594506 | After certain hardware error events, it is possible that Solaris PSH events are no longer transported between the SP and the domain.<br>For examples, see "PSH Events Are no Longer Transported (CR 6594506)" on page 48. | See "PSH Events Are no Longer Transported (CR 6594506)" on page 48 |
| 6596503 | The output of the Solaris `prtpicl` command used with the `-v` option might show CPU cores or strands with an operational status of `enabled` when, in fact, the cores or strands do not exist. | Instead, use the output from the `prtdiag` or `prtpicl -c cpu` commands. |
| 6607315 | The login prompt resets five seconds after the Solaris OS boots.<br>This only occurs when using a local keyboard as the input device (`input-device=keyboard`). This issue does not occur with the virtual-console. | Use the virtual console as the input device. |
| | The output of the `raidctl -h` command and the `raidctl` man page display some unsupported features. | The Sun SPARC Enterprise T5120 and T5220 servers currently only support RAID 0 and RAID 1 for the o- board SAS disk controller. The `raidctl` utility can be used to create and delete RAID 0 & RAID 1 volumes. Refer to the *Sun SPARC Enterprise T5120 and T5220 Servers Administration Guide* for supported RAID information. |

# Servers Might Experience Panics Generated From the PCIe Root Complex (CR 6555956)

A panic could occur during reboot with the following message:
`"Fatal error has occurred in: PCIe root complex."`

The panic only occurs during a reboot and has never been observed during a reboot that follows the panic. The panic can occur even if no external USB devices are connected to the server.

Workarounds:

If your server experiences this panic, perform one or more of the following workarounds:

- To ensure that the system reboots and continues to function after a panic, configure the server to automatically reboot using one of the following methods:
  - Using the ILOM CLI:

```
-> set /HOST/bootmode script="setenv auto-boot? true"
-> set /HOST/bootmode script="setenv auto-boot-on-error? true"
```

  - Using the ALOM CMT compatibility CLI:

```
sc> bootmode bootscript="setenv auto-boot? true"
sc> bootmode bootscript="setenv auto-boot-on-error? true"
```

- To eliminate the possibility of the panic, disable the USB (only perform this workaround if you do not use USB devices, including the built-in DVD drive):
  - Using the ILOM CLI:

```
-> set /SYS/MB/PCIE-IO/USB component_state=Disabled
```

  - Using the ALOM CMT compatibility CLI:

```
sc> disablecomponent /SYS/MB/PCIE-IO/USB
```

    All devices on the USB will be disabled, including the DVD drive. Be aware that the service processor will generate a fault and turn on the fault LED.

    If you need to enable the USB, use the following commands:

  - Using the ILOM CLI:

```
-> set /SYS/MB/PCIE-IO/USB component_state=Enabled
```

- Using the ALOM CMT compatibility CLI:

```
sc> enablecomponent /SYS/MB/PCIE-IO/USB
```

# Information Missing From `prtpicl` and `prtdiag` Commands (CR 6586624)

The `prtdiag` command might not display environmental and FRU status. If the `-v` option (verbose) is specified, the firmware version and the chassis serial number might not be displayed.

In addition, the `prtpicl` command might not display the physical-platform section.

Use one of the following alternative methods to obtain missing information:

- Alternative for the `prtdiag` command – Use the following ALOM CMT compatibility CLI commands:

```
sc> showenvironment - displays the system's environmental status
sc> showfru component NAC - displays a component's FRU status
sc> showplatform - displays the Chassis Serial Number
sc> showhost - displays the firmware version
```

- Alternative for the `prtpicl` command – Walk through the targets of the `show SYS` command with the ILOM CLI and the ILOM graphical user interface. Refer to the *Sun Integrated Lights Out Manager (ILOM) 2.0 User's Guide* for details.

# Booting the Solaris OS From an External USB DVD-ROM Drive Could Cause a Panic (CR 6588452)

Booting the Solaris 10 OS from an external USB DVD-ROM drive could panic the server and fail to boot the OS. This situation happens because the Solaris OS names the device `storage@1`, and the System Firmware names the device `cdrom@1`.

Both the OpenBoot firmware and Solaris OS follow the 1275 USB bindings rules to name nodes. For example:

**TABLE 2-5** 1275 USB Bindings Rules for Naming Nodes

| bInterface Class | bInterface Subclass | bInterface Protocol | Name |
|---|---|---|---|
| 0x08 | 1 | Any | `storage` |
| 0x08 | 2 | Any | `cdrom` |
| 0x08 | 3 | Any | `tape` |
| 0x08 | 4 | Any | `floppy` |
| 0x08 | 5 | Any | `storage` |
| 0x08 | 6 | Any | `storage` |
| 0x08 | Any | Any | `storage` |

The Solaris 10 OS always names the node as `storage@`*n*. Therefore, the storage device with a subclass of 2, 3, or 4 (SPARC Enterprise T5120 and T5220 must be 2) cannot boot with Solaris 10 OS DVD.

Workaround: Use the drive whose subclass is not 2, 3, or 4 as the replacement.

# The `prtdiag -v` Command Has Formatting Issues (CR 6587389)

Some of the information displayed by the `prtdiag`(1M) command is difficult to read when the `-v` option is used. White space is missing between the first and second fields in the report.

The following formatting issues are displayed in the `prtdiag -v` command output:

- *Fans sensors* – Missing spaces tab between Location and Sensor columns.
- *Temperature sensors* – DIMMs missing spaces tab between Location and Sensor columns.
- *LEDs* – Location missing for SERVICE, LOCATE, ACT, PS_FAULT, TEMP_FAULT, and FAN_FAULT DIMMs. Missing spaces tab between Location and LED.
- Locations of sensors – have the first portion of their location truncated, resulting in no location being reported for some items such as system status LEDs.

To see this formatting information, use the `showenvironment` command in the ALOM CMT compatibility CLI:

```
sc> showenvironment - displays the system environmental status
```

# PSH Events Are no Longer Transported (CR 6594506)

After certain hardware error events, it is possible that PSH events are no longer transported between the service processor (SP) and the domain. The following scenarios are subject to this problem:

- In a non-LDoms environment, an unrecoverable error occurs in the Solaris domain.
- In an LDoms environment, an unrecoverable error occurs in the control domain.
- In either an LDoms or non-LDoms environment, a fatal error occurs in the system (a fatal error resets the system at the hardware level).

---

**Note –** In an LDoms environment, unrecoverable errors in a noncontrolled LDoms guest domain are *not* subject to this problem.

---

For example, an unrecoverable error in the control domain causes Solaris to panic. Messages similar to the following are reported to the control domain console:

```
SUNW-MSG-ID: SUNOS-8000-0G, TYPE: Error, VER: 1, SEVERITY: Major
EVENT-TIME: 0x46c61864.0x318184c6 (0x1dfeda2137e)
PLATFORM: SUNW,SPARC-Enterprise-T5220, CSN: -, HOSTNAME: wgs48-100
SOURCE: SunOS, REV: 5.10 Generic_Patch
DESC: Errors have been detected that require a reboot to ensure system
integrity.  See http://www.sun.com/msg/SUNOS-8000-0G for more information.
AUTO-RESPONSE: Solaris will attempt to save and diagnose the error telemetry
IMPACT: The system will sync files, save a crash dump if needed, and reboot
REC-ACTION: Save the error summary below in case telemetry cannot be saved
```

Or, an unrecoverable error causes the firmware to abort and messages similar to the following are reported to the SP console when logged into the ALOM CMT compatibility CLI console:

```
Aug 17 22:09:09 ERROR: HV Abort: <Unknown?> (228d74) - PowerDown
```

After the control domain recovers, a diagnosis is performed. Messages to the console indicate the cause of the unrecoverable error. For example:

```
SUNW-MSG-ID: SUN4V-8000-UQ, TYPE: Fault, VER: 1, SEVERITY: Critical
EVENT-TIME: Fri Aug 17 18:00:57 EDT 2007
PLATFORM: SUNW,SPARC-Enterprise-T5220, CSN: -, HOSTNAME: wgs48-100
SOURCE: cpumem-diagnosis, REV: 1.6
EVENT-ID: a8b0eb18-6449-c0a7-cc0f-e230a1d27243
DESC: The number of level 2 cache uncorrectable data errors has exceeded
acceptable levels. Refer to http://sun.com/msg/SUN4V-8000-UQ for more
information.
AUTO-RESPONSE: No automated response.
IMPACT: System performance is likely to be affected.
REC-ACTION: Schedule a repair procedure to replace the affected resource,
the identity of which can be determined using fmdump -v -u <EVENT_ID>.
```

At this point, the problem might have been encountered. This problem will prevent future PSH events (for example, new hardware errors, correctable or uncorrectable) from being transported into the domain and properly diagnosed.

Workaround: After the domain recovers and the diagnosis message is printed to the Solaris console, reset the service processor as follows:

```
sc> resetsc -y [ALOM CMT compatibility CLI]
OR
-> reset /SP [ILOM CLI]
```

Once the SP is restarted and you are able to log in as the admin (which means all daemons are ready), type the following in the Solaris control domain:

```
# fmadm unload etm
# fmadm load /usr/platform/sun4v/lib/fm/fmd/plugins/etm.so
```

# LDoms Related Issues

TABLE 2-6 lists the late-breaking LDoms related issues. Additional information for some of the change request (CR) issues is provided following the table.

**TABLE 2-6** LDom Related Issues

| CR | Description | Workaround |
|---|---|---|
| 6540368 | In Logical Domains 1.0.1 software, there are a few cases where variable updates do not persist. | For more information, refer to the *Logical Domains (LDoms) 1.0.1 Release Notes*. |
| 6543749 | A guest domain `wanboot miniroot` download could take more than 30 minutes.<br>During boot or installation over wide area networks, the time it takes to download the miniroot could significantly increase when using a virtual network device.<br>This performance degradation is relevant only when trying to boot or install over wide area networks using a virtual network device. A similar boot or installation using a physical network device works as expected, as does a traditional local area net boot, or installing from a virtual network device. | Be aware of the time needed to boot or perform installations over a wide area network with a virtual network device. |
| 6567748 | Domain status might not be reported accurately. For example, the status reported for a domain might be `Running` when the OS is not running.<br>This problem is encountered when the domain status is reported by ILOM (BI and CLI) and from the ALOM CMT compatibility `showplatform` command.<br>The ambiguity also exists in the ILOM control MIB, but not in the Sun platform entity MIB. Thus, the ambiguous domain status might be visible to third-party systems monitoring tools if they monitor this entry. | Ignore the domain status information from all CLIs and BI output as well as from the domain status entry in the ILOM control MIB. Retrieve the true status of the domain by accessing the domain console. |

**TABLE 2-6** LDom Related Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6592934 | In the unlikely event that POST times out before completing its test cycle, the firmware issues the following message to the console:<br>`ERROR: POST timed out. Not all system components tested.`<br>The system continues to boot, but in a degraded state. During the boot process the following error messages are displayed:<br>`WARNING: Unable to connect to Domain Service providers`<br>`WARNING: Unable to get LDOM Variable Updates`<br>`WARNING: Unable to update LDOM Variable`<br>Any programs or services that depend on an LDC channel run in a degraded state, or not at all. Some programs that require LDC to function are `ldmd`, `fmd`, and `eeprom`. | If the following error is observed on the console during boot, power cycle the system, and ensure that POST runs to completion.<br>You can also boot without running POST. |
| 6593132 | Changes to OpenBoot PROM variables with nondefault LDoms configuration do not persist.<br>If an LDoms variable is set to a nondefault value when an LDoms configuration is saved to the service processor, and then later changed back to its default value, the change to its default value will not persist after a power cycle. | Save the SP configuration after changing an LDoms variable. Example:<br>`# ldm remove-spconfig my-new-config`<br>`# ldm add-spconfig my-new-config` |
| 6594395 | The `ldm set-variable` command allows you to set an LDoms variable to any arbitrary string. If an LDoms variable is set to a value that is not valid, the OpenBoot firmware issues a warning message during boot with a list of correct values, but without giving the name of the variable in question. | For more information, refer to the *Logical Domains (LDoms) 1.0.1 Release Notes*. |
| 6597815 | XAUI and CPU resources added after initial LDoms Setup are not available to LDoms Manager. | When you add CPU or XAUI resources to a server configured to use logical domains, you must revert to the factory default configuration to allow the LDoms Manager software to allocate those resources to guest domains. |

**TABLE 2-6** LDom Related Issues *(Continued)*

| CR | Description | Workaround |
|---|---|---|
| 6597761 | `rm-io` followed by multiple `set-vcpu` operations might cause the firmware to abort or `ldmd` core dump.<br>During a single delayed reconfiguration operation, do not attempt to add CPUs to a domain if any CPUs were previously removed during the same delayed reconfiguration. | Either cancel the existing delayed reconfiguration first (if possible), or commit it (by rebooting the target domain), and then apply the CPU addition.<br>Failure to heed this restriction can, under certain circumstances, lead to the firmware returning a parse error to the LDoms Manager, resulting in the LDoms Manager aborting. Additionally, if any VIO devices had been removed during the same delayed reconfiguration operation, when the LDoms manager restarts after the abort, it incorrectly detects the need to perform a recovery operation. This situation results in a corrupt configuration, followed by a power down. |

# Documentation Errata

This section describes known errors and corrections to the Sun SPARC Enterprise T5120 and T5220 server documentation.

## *Sun SPARC Enterprise T5120 and T5220 Servers Administration Guide*

### Table 2-5 Lists Incorrect Device Identifiers

The device identifier `/SYS/MB/NET`*port_number* should be replaced with the device identifier `/SYS/MB/GBE`*controller_number*.

The device description for `/SYS/MB/GBE`*controller_number* should be as follows:

GBE controllers (Number: 0-1)

- `GBE0` controls `NET0` and `NET1`
- `GBE1` controls `NET2` and `NET3`

In other words, replace this row of Table 2-5:

| Device Identifiers | Devices |
|---|---|
| `/SYS/MB/NET`*port_number* | Ethernet ports (Number: 0-3) |

with this row:

| Device Identifiers | Devices |
|---|---|
| `/SYS/MB/GBE`*controller_number* | GBE controllers (Number: 0-1)<br>• `GBE0` controls `NET0` and `NET1`<br>• `GBE1` controls `NET2` and `NET3` |

### Under Table 2-4, in the Bullet List of Default Settings

The default value of `/HOST/diag level=min`. The correct default value of `diag level` should be `max`.

# *Sun Integrated Lights Out Manager 2.0 Supplement for the Sun SPARC Enterprise T5120 and T5220 Servers*

## Incorrect Default Value Is Specified in the Procedure, "To Specify the Level of Diagnostics Using the CLI"

The default value of `/HOST/diag level=min`. The correct default value of `diag level` should be `max`.

## Two ILOM Properties that Are not Described in This Manual

The following list describes the missing properties:

- `/SP/network dhcp_server_ip` – The IP address of the DHCP server that provided the dynamic IP address requested by the service processor.
- `/SP/policy HOST_AUTO_POWER_ON` – Automatically powers on the host when the service processor has been booted. If this policy is set to `enabled`, the service processor sets `HOST_LAST_POWER_STATE` to `disabled`.

## ALOM Compatibility CLI Example in the Section "*Adding a Commit Step*" on Page 38 Is Incomplete

The description of the ALOM compatibility shell command-line argument `netsc_commit` is incomplete on page 38.

The first sentence at the top of the page should include the argument `true`, as follows:

Instead, change the network configuration property then commit it using `setsc netsc_commit true` in the ALOM compatibility CLI or `set /SP/network commitpending` using the ILOM CLI.

Where the first example shows:

```
sc> setsc netsc_ipaddr xxx.xxx.xxx.xxx
sc> setsc netsc_commit
```

The example should include the value of **true** on the second line:

```
sc> setsc netsc_ipaddr xxx.xxx.xxx.xxx
sc> setsc netsc_commit true
```

## Argument List for Resetting the Service Processor to Factory Defaults Is Incorrect

The section titled *Changing Service Processor Settings to Factory Defaults* lists three options, `none`, `configuration`, and `all`. The `configuration` option is not available. The only options are `none` and `all`.

# In Several Sun SPARC T5120 and T5220 Server Manuals

## Hard Drive Logical Device Names Differ

In the documentation, the logical device names for the hard drives are described using `c0t`*xxxx*. However that might not match the server's logical device names because device names can differ. If the system has a DVD drive, the logical names of the hard disks will be `c1t`*xxxx* (the DVD is `c0t`*xxxx*). If the system has no DVD the logical names for the disks are `c0t`*xxxx*.